Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Date 20 JUL 1981

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. EO/DDA		20 JUL 1981
2. ADDA		7-20
3. DDA		JUL 1981
4. Registry		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

1-2/3: Since the fact that IHSA is to report to the DDA has spilled out in the Task Force Study, I assume it will not be addressed again in the forthcoming EXCOM session. - - -

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
	Phone No.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE--INTERNAL USE ONLY

DDA Registry
81-1495

EXCOM 81-9032

17 July 1981

DDA REGISTRY
FILE: DDA (Exec Com)

MEMORANDUM FOR: Executive Committee Members

FROM : Director, DCI/DDCI Executive Staff

SUBJECT : Executive Committee Review of Information Handling Systems Architect Mission and Functions

1. The Executive Committee will meet on Friday, 24 July, at 10:00 AM in the DCI Conference Room to review the mission and functions of the Information Handling Systems Architect (IHSA). The EXCOM agreed last fall to have such a review once the new Architect had had time to get settled and evaluate Agency information handling.

STAT 2. IHSA [redacted] will begin the session with his evaluation and recommendations. His written report is at Attachment A.

3. You should be prepared to give the DDCI your views on the following:

(a) Approval of the Appendix B plan and procedures for the two-year development of a CIA information handling systems strategic plan.

(b) Approval of Appendix C policy and procedures with special attention to systems approval processes and paragraph five IHSA responsibilities.

(c) Approval of Appendix D as the charter for the IHSA, replacing all previous notices and charters, giving special attention to those functions concerning IHSA approval authority (2c), development and promulgation of standards (2k), and coordination of information handling systems training (2m).

STAT [redacted]

Robert M. Gates

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE--INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

REPORT OF THE IHSA TO THE EXCOM, JULY 1981

1. Background

In the winter of 1979 the EXCOM commissioned a study of information handling in the Agency. A task force of five members was assembled, broadly representing the Agency operational interests. They also gave breadth to technological considerations through the diversity of their backgrounds. The study took one year, and involved extensive interaction with much of the senior management of the Agency. The final report of the Information Handling Task Force (IHTF) was published this spring. (Reference A)

The study team was charged to investigate: the management of information handling systems, standards governing their development and acquisition, implementation management, organization of the Agency for effective utilization of IHS, and the strategy for effective utilization of compartmented information. The recommendations made in the final report following the year long study effort addressed organizational and management changes, programmatic objectives, security procedures, personnel management, and policy.

Perhaps the primary recommendations of the Task Force was the establishment of the office of Information Handling Systems Architect (IHSA), with the mission of performing Agency-level planning for information services with particular emphasis on applying advanced technology. The missions and functions of the IHSA were discussed in several meetings of the EXCOM and resulted in the missions and functions statement forwarded by the DDA to the EXCOM (reference B) and Attachment 2 thereof (Appendix A). The functions in this statement were broadly defined, presumably with the understanding that recommendations with repect to implementing procedures would be developed by the IHSA. One of the principal objectives of this presentation is to put forward the procedures by which the IHSA believes these functions are best implemented. It is the additional purpose of this briefing to brief the EXCOM on the organization and status of the IHSA and its accomplishments to date.

2. Staffing

The IHSA was selected in the fall of 1980 and entered on duty January 5, 1981. After a brief period of familiarization, the professional skills required of the remaining four staff members were determined, job descriptions for these positions prepared, vetted, and forwarded to the Office of Personnel for authorization. Searches were then made against these job descriptions, beginning with the Deputy of the Office.

All four staff officers have now been selected. They provide the office with expertise in systems management, systems software, systems hardware, communications, and analysis and

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

evaluation of systems performance. They all come from within the Agency, and provide a broad familiarity with Agency systems and procedures. The officers of the staff are:

STAT * [redacted] (SIS-2) - former technical director of the Consolidated SAFE Project Office; four years in the Agency; strong industrial background in hardware and software aspects of systems development.

STAT * [redacted] (GS-15) - former senior communications officer in the OSO; a senior career communications officer with overseas station management and network development experience.

STAT * [redacted] (GS-14) - former section leader in the CAMS Management Branch, PTO; career Agency employee with experience in management procedures for the acquisition of large information handling systems; a principal participant in the development and acquisition of the Agency's standard GIMS data base management system.

STAT [redacted] (GS-13) - former analyst with IMS in the DDO; responsible for the recent development of IMS' strategic plan for information handling systems into the 1990's; contributed widely to the development of the NDS at the NPIC.

Although not expressed as a recommendation of the IHTF, it was felt that the office of IHSA could be of the greatest value to the Agency if staff members could be assigned on a rotational basis. This would permit them to gain experience in the planning and management of the development of integrated Agency information handling systems from the perspective of such an office. They could then carry that knowledge back with them to specific developmental responsibilities in the operational components. For that reason, all the selected staff members are on rotational assignment to this office.

3. Progress to Date

(1) Familiarization

Guiding the efforts relevant to staffing and planning the initial efforts of the office has been the early familiarization of the Architect with the various offices and projects of the Agency. The IHS involvements of the Agency are so broad, that even at this point the knowledge of the Architect is substantially incomplete. Nevertheless, it is felt that most of the principal thrusts and developmental concerns

that are going to be important to the Agency IHS architecture are understood and appreciated. With the recent addition of the remaining staff members, it will now be possible for the office to become familiar with some of the broader scoped and more complex developments. To date the familiarization has primarily encompassed the relevant offices of the DDA, IMS in the DDO, and NFAC.

(2) Documentation of the Current Architecture

Fundamental to developing any long range plan for Information Handling Systems in the Agency is a clear understanding of where we are today. Toward that end, two studies have been contracted for to define elements of the current system architecture. In both of these instances, it was found that there were other studies beginning for which the required data collection was nearly identical to system definition needs of this office. As a consequence, the system documentation efforts were developed as amendments to these new study contracts. Essentially, they require that the contractors document the data they collect on the current systems for the purpose of designing new capabilities.

One of these systems documentation efforts is the documentation of major data bases within the Agency and their data flow interrelationships. The focus is on the larger and broadly used data bases, since by their size and and importance, they tend to become the "rocks" to which the future architectural developments must be accommodated. The product of this effort is to be a reference document defining the Agency's current "data base architecture".

The second effort is to document the Washington area external communications network. It is "piggy backing" a contractor study developing and evaluating design alternatives for this network. The product is a reference document defining this external communications network.

The prototype for such sectional documentation of the current architecture is the documentation of the Headquarters Building data traffic flow (reference C). This document was originally produced about two years ago by the Office of Data

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Processing, and defined the network linking the major functionalities in the Headquarters Building. As part of the current systems documentation effort, this study will be updated by the ODP to reflect the current status. This particular effort is smaller than the other two and will be done internally.

(3) Development of Standards

As a result of the establishment of the IHSA, it now chairs the Standards Committee. This committee, commissioned in 1979 by the DDCI, is charged with developing Agency-wide professional standards for systems development requirements, requirements definitions, specifications, and documentation.

It became clear in reviewing the effort available to the committee from its members that in order to achieve the desired rate of progress, contractor support would be required. An effort is now under way to acquire such support. When it is available, the committee will then function as a review, modification and approval body, working with the draft standards developed by the contractor. The members will function both on the basis of their individual expertise and as representatives of their components.

(4) Interaction with New Systems Developments

In the process of becoming familiar with the Agency programs, the IHSA has interacted with various major systems developments. Included were SAFE, CRAFT, terminals, and scientific programming and computational requirements. The interaction has been in the context of the relationship of such systems to the overall Agency IHS architecture.

(5) IHS Acquisition Review

As a checkpoint in assuring that Agency IHS acquisitions are consistent with the integrated architectural objectives of the Agency, the IHSA has become formally involved in the contract review process. The IHSA has been designated as an Advisor to the Agency Contract Review Board on all procurement actions involving information handling systems. In addition he will review all Requests for Procurement Services (Form 2420) and Request for Procurement Action memoranda for IHSs for Class I and Class II system acquisitions (see Appendix C for definitions).

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

(6) IHS Training Within the Agency

Because of a concern developed by the System Architect in his familiarization with IHSs in the Agency, a preliminary study by OT&E of the IHS training requirements was requested. This study has just been completed. It indicates that we have a training demand which substantially exceeds our current resources, and that, as an Agency, we have not begun to do the necessary planning and budgeting to deal with it.

4. Major Thrusts of the IHSA

The activities of the IHSA can be aggregated into three areas:

* Strategic Planning
* Current Programs Interaction
* Environment Development

It is the judgement of the IHSA that the first two categories have a symbiotic relationship. Without the other, efforts in either area are of little value. A background strategic planning effort is required to provide the long term perspective needed in assessing the architectural implication and requirements of current programs. Concomitantly, to be of value, strategic planning has to be firmly based on the characteristics of existing and developmental systems. Any system now under development can be expected to have a useful life on the order of ten years, and this exceeds the technological horizon in today's fast moving information systems environment. As a consequence, what is being developed now, to a significant extent, will define the future. A consequence is that strategic planning without current program interaction is merely an academic exercise.

The environment development activities encompass such elements as standards, training, the software development environment, computer aided instruction, and the "user friendliness" of systems. As the Agency now moves forward to develop needed systems and subsystems of major size, it is recognized that we need to develop a common culture with respect to IHSs. We simply cannot rely upon standards to achieve commonality with respect to procedures, design techniques, and documentation. And without commonality amongst these factors, achieving an interoperable and unified architecture is judged to be very difficult, if not impossible. Thus the IHSA associates

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

great importance with the Environment Development activity in achieving the Agency's objectives with respect to the development of an integrated IHS Architecture.

5. Implementation of the Charter

The missions and functions of the IHSA appear in a variety of sources, principally the Information Handling Task Force report and the DDA memorandum for the EXCOM summarizing the committee's findings. The latter enclosed the action recommendations and the revised mission and function statement for the Architect of Information Services (now IHSA). The succinct character of the statements of missions and functions in these documents puts the burden on the IHSA to define their proposed implementation. In this section, this implementation is discussed in terms of six functions which map into the three areas of activities previously discussed:

* Information collection
* Strategic planning
* Implementation and support of the IHS management process
* Accreditation of requirements for architectural components
* Coordination of IHS training
* Development and promulgation of Agency standards

(1) Information Collection

The first requirement for the IHSA to be able to perform its mission is the collection of information relevant to the development, acquisition, enhancement, maintenance and operation of information handling systems in the Agency. Without a thorough knowledge of where we are today and what we are building and acquiring, effective strategic planning is impossible.

The information collection requirements of the IHSA are implied by function number 1 of Appendix A and specifically addressed in functions 2, 6, 7 and 10.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

In order to support interaction with current programs, the types of data needed include:

* Functional requirements
* Program acquisition plan
* Feasibility analyses and trade-off studies
* System specification
* Management Plan
* System functional specifications
* Interface control specifications
* System detail design specifications
* System test and validation plan

Such documents should be supplied to the IHSA as they become available within the process of system acquisition. Other documents relating to operation of the system should only be provided on request, because their availability is not routinely relevant to the functions of the office.

Additional support may be needed from the various Offices performing IHS functions relevant to defining the current architecture. While the three studies mentioned earlier will provide a substantial definition of the existing architecture, they do not present the complete picture. As further areas of the existing architecture which are not documented are demarcated and funds become available, commissions for development of such documentation will be made by the IHSA.

(2) Strategic Planning

The development of a strategic plan for the Agency's IHSs will of necessity involve all of the IHS service and user organizations, as well as the IHSA. It is a job which will require approximately two years effort, and be a continuous background activity to the other functions. Recognizing that, as discussed earlier, strategic planning is a concomitant activity to interaction with current development programs, strategic planning is probably the most important function of the IHSA.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

In order to function effectively, it will be necessary for the IHSA to call upon the various IHS service Offices for support in developing portions of the strategic plan. The IHSA is too small to develop all of the detail required in a comprehensive strategic plan, and should not attempt to do so under any circumstances. Rather, the office should commission strategic plans in subsection areas within the purviews of various specific offices, as needed to support the overall planning process. This is the classic format of strategic planning in large, private organizations: a small planning staff sets and defines objectives and then requests line organizations to develop detailed plans supporting those objectives.

The process is an iterative one, with the planning staff reacting to the component plans. Typical reactive questions are those concerning interfaces, architectural alternatives and technology inclusion. The component organizations may then be asked to recycle the plans to respond to these broader considerations. The IHSA will focus most of its attention on matters pertaining to interfacing systems and network performance.

It should be recognized, however, that there may be specific technical questions in particular areas which will receive the concentrated attention of the office. But, to attempt to do such on a broad basis, would be for the IHSA to intrude excessively into the operational planning responsibilities of line organizations. Thus, the commissioning process is a necessary part of the strategic plan development.

The overall plan for the development of a strategic plan, at this point in time, is composed of three parts. The first is the development of a rough draft strategic plan encompassing the entire IHS architecture of the Agency. The intent of this draft is to cover as completely as possible all of the elements, providing the various components with planning material to which they can react. The IHSA will seek as much information as can be provided on an informal basis from service and user organizations, but will not institute a formal requirements definition effort. The latter is judged marginally more useful than the informal approach, and consumes considerably more time and resources. Completion of this first phase is estimated to be one year from initiation.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

In the second phase, the responses of the various organizations will be accommodated into a unified draft plan. Working with the Comptroller this unified draft plan will also be brought into rough harmony with budgetary expectations and estimates. In order to do this, it may be necessary to vary the time phasing of the various programs so as to reconcile the gross demand of these programs upon the personnel and financial resources of the Agency, with their likely availability. It is anticipated that this phase should require about eight months.

In the last phase of the development the final plan will be produced, taking into account the comments on the unified draft plan. This plan will include budget projections for the next four outyears. The plan itself, however, will extend for a period of about ten years. Clearly, there will have to be significant Comptroller and EXCOM involvement in this final phase to achieve the gross objectives of the Agency. This will be needed in sorting out the priorities with respect to resource allocation, and in determining the necessary levels of resource commitments.

The specifics of the implementation process for strategic plans are discussed in Appendix B.

(3) Implementation and Support of the IHS Management Process

The proposed program for oversight management of the development of IHSs in the Agency is based upon the proposition that the appropriate oversight management level and process varies with the size of the system. The presumption is that the architectural impact and risks vary roughly in proportion to the size. Consequently, it is the recommendation of the IHSA that the systems be categorized for the purpose of oversight management based upon the size of the commitment involved. The largest systems are those requiring a substantial portion of the Agency's resources to effect, and thus represent a corporate commitment, even if totally serving a single user. An intermediate class would be those of significant size and importance with respect to the overall Agency IHS architecture, but not representing

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

significant commitments and risks to the Agency as a whole. The smallest group of systems would be those which are generally resident upon large, general service systems, and which do not affect the architecture, other than to represent demands for service.

It is recommended, then, that there be three categories of systems: Class I (Large), Class II (Medium) and Class III (Small). The thresholds defining the boundaries between these classes are acquisition cost values. It is recommended that the oversight management responsibility for the smaller two be delegated to the Directorates, and that the Directorates delegate that for the smallest to the constituent offices. An exception to such delegations may be systems with multiple user components.

The recommended oversight-management review process consists of three milestones: the planning milestone, which is a budgetary milestone and which should interface with periodic budgetary processes; the systems specification milestone, which is a management milestone; and a preliminary design review milestone, which is a management milestone. The scheduling of the last two is determined by the characteristics of the project, and are not synchronized with any periodic process. This basic management review process would apply to all three categories of systems, and there should be documentation requirements for each milestone.

A format for such a top management process for managing the development of systems is attached as Appendix C. It is recommended that the IHSA be authorized to develop a DCI directive concerning oversight management for the development of IHSs based upon this format.

(4) Accreditation of Requirements for Architectural Components

The development of requirements for a new system is normally the responsibility of the user. Interpreting this as an exclusive prerogative, however, has been a prime source of problems

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

within the EDP world. A pattern of exercising such a prerogative usually results in noninteroperable systems and projects which fail to meet their performance objectives within their defined cost and schedule envelope.

Some of the principal problems deriving from identifying requirements as a user prerogative are:

* Lack of a reconciliation of user's requirements with the implementation environment;

* Inadequate attention to adjunct user requirements; and

* Lack of a consolidation and validation mechanism for requirements derived from a community of users.

The lack of reconciliation involves an interactive process between the user and the developer. The system requirements should evolve from the functional requirements as the consequence of an interplay between the techniques and mechanisms of their implementation and the restructuring of user organizations and operations in conjunction with the new system. One of the worst mistakes that can be made is simply to automate current manual procedures; the result is usually a system several times the size and cost as is needed to satisfy the need. Implications of such a direct transformation approach are not always well understood by user organizations.

With reference to adjunct user requirements, there is an increasing functional complexity of Agency systems due to the increasing involvement of adjunct users. We are now developing systems like LIMS, a Logistics system with many adjunct user organizations. The problem of the definition of the requirements for such a system can be difficult, particularly when an IOC date and funding constraints force compromises.

Lastly, there is the problem of requirements for general services systems. The requirements for these systems drive their costs, availability, and acceptance just as they do for any other. The problem is the establishment of an acceptable

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

but not excessive set of requirements. There have to be compromises of both user needs and developer implementation preferences in order to achieve a cost effective result. In addition, to assure a system that fills an adequate serviceable life and provides an effective integration into the Agency IHS architecture, the acquisition strategy should reflect, insofar as possible, the market availability of the desired technologies.

All of these examples reflect a strong need for accreditation of a new systems functional requirements. For complex systems, this can only be done at an Agency-wide level, because the problem is an ecumenical one. It also requires concentrated top-level attention, because the problems are complex; however, these problems cannot be successfully dealt with in an EXCOM-type project review unless the key issues and tradeoffs have already been identified and analyzed.

To effect this requirements oversight, the IHSA has been designated to receive all Requests for Procurement Services (Form 2420) and Requests for Procurement Action memoranda, for Class I and Class II information systems received by the Procurement Office of the Office of Logistics. If any problems are found with such requirements, the IHSA will deal directly with the originating component to resolve such problems.

(5) Development and Promulgation of Standards

Achieving a unified and interoperable architecture is impossible without a set of standards to guide the process of systems development. Through the common approach provided by such standards, the myriad small details that affect systems technical and functional interoperability can be successfully resolved.

We need standards in three areas relative to IHS development:

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

* Management procedures and development processes

* Interface control

* Data item specification (e.g., per CDRL)

Examples of documents in each category exist in the Agency, some of them excellent. But we do not have anything approaching a complete set of such standards even in local environments. A moderate or large-sized systems development can readily require the adherence to or production of 20 different documents. For the project personnel to figure all that out de novo is an unreasonable requirement, and it is certainly not going to produce an homogenous environment. We need a uniform set of Agency-wide standards to serve as a baseline for system developers. Providing a normative process and a complete documentation baseline is the objective, not rigid adherence to a set of overly detailed specifications and standards.

In order to have a single set of such standards and have them for the entire Agency, we need centralized development and promulgation of standards. In recognition of this fact, the Office of Data Processing has recently transferred chairmanship of the Agency Standards Committee to the IHSA. This committee, chartered by the DDCI in 1979, has the commission of developing the Agency-wide standards that we need to support our investments in developing an integrated information handling system architecture in the Agency.

(6) Coordination of Information Handling Systems Training

As mentioned earlier, the second dimension of developing a common IHS culture within the Agency is training. To develop a common culture, a common understanding in dealing with IHSs, we need to put a major emphasis on IHS training. To do the job it has to do, that training has to be centralized. The engineer acquiring software for [redacted] in OC should have the same approach

STAT

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

and require of the contractor the same procedures and documentation as that acquiring the CAMS in ODP, as that acquiring CRAFT in IMS. If they do not, the problem of making these systems interoperate is made immeasurably more difficult.

There are two types of training required: skills and disciplinary. We have a comprehensive course structure for the former, generally dispersed throughout the Agency. Disciplinary, or professional-level, training, however, is generally handled on an ad hoc basis. We do not have a regular program in disciplinary skills such as that offered by the Information Science Center in OT&E in analytic tools to the Intelligence Community. It is clear from the OT&E study that there is a looming demand for a substantial increase in IHS training throughout the Agency. The resources required to support this training requirement clearly need to be increased, and the study indicates that this increase will be substantially less if done centrally than on a distributive basis. Distributed IHS training presents a greater concern, however, of developing a common IHS culture within the Agency. Developing an IHS training program that will meet the needs of the Agency components, component-unique training excluded, will require top-level guidance and support, and should rely heavily on centralized resources.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

REFERENCES

A. "Information Handling Study," CIA, 28 August 1980

B. Memorandum for DCI, DDCI and EXCOM from DDA, dated 5 September 1980, Subject: Final Report of the IHTF

C. "Flow of Electrical Traffic in the Headquarters Building," ODP, March 1980

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

APPENDIX A

ARCHITECT OF INFORMATION SERVICES:*

MISSION:

Performs Agency level planning for Information Services with particular emphasis on application of technology.

FUNCTIONS:

1. Publishes Strategic goals and objectives for purpose of program guidance.
2. Monitors progress toward goals and objectives and reports state of Information Handling to EXCOM (incorporates ADP review).
3. Provides final approval for all agency information handling systems architecture.
4. Consolidates requirements for IH to maximize commonality and minimize unique development.
5. Conducts design reviews during conceptual design phase.
6. Maintains technology forecast and reports trends to management.
7. Acts as Agency focal point to Community on matters of IH.
8. Commissions system designs to fulfill architecture.
9. Initiates studies and analyses for the purpose of identifying ways to improve effectiveness and efficiency of IH.
10. Maintains a current data base on the status of information systems and their interrelationships.

* Attachment 2 of Reference B

ADMINISTRATIVE - INTERNAL USE ONLY
Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

APPENDIX B

INFORMATION HANDLING SYSTEMS

STRATEGIC PLANNING

1.0 GENERAL - SCOPE AND PURPOSE

A Strategic Plan for Information Handling Systems shall be developed and maintained. The Plan shall be published annually in time to provide goals, objectives, and implementation strategies to guide other Information Handling Systems planning, programming, and budgeting activities.

The scope of the Strategic Plan is electronically-based systems which affect the creation, movement, use, storage, retrieval, and disposition of intelligence and management information.

The Plan will be specific up to 5-7 years in the future. Planning beyond this period will be of a progressively more generic character.

2.0 RESPONSIBILITIES

The Strategic Plan for Information Handling Systems shall be jointly developed by the IHSA and organizations which supply, consume, or affect information services in some manner.

The IHSA will be the focus for the planning activity and shall be responsible for:

- o Planning and coordinating the data collection, analysis, and the formulation of goals, objectives, and implementation strategies.
- o Integrating the parts into a cohesive Agency Plan and publishing the document.

Organizations which supply, consume, or affect information services shall be responsible for supporting the IHSA in:

- o Data collection efforts (responding to directed questions or participating in working meetings).
- o Analysis of the environment - internal and external factors which may influence the plans for future information handling systems.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE INTERNAL USE ONLY

- o Analyzing interface problems associated with inter-operation of new and existing systems.

- o Developing top-level phaseover and conversion plans.

3.0 DEVELOPMENT PROCESS

Information Handling Systems Strategic Planning is phased into the following processes:

- o Environment data collection and analysis.

- o Architecture Definition.

- o Analysis of Performance.

- o Establishment of goals, objectives, and implementation strategies.

- o Monitoring progress

A brief discussion of each phase follows:

Environment Data Collection and Analysis

This phase is an examination of the current environment in terms of its weaknesses, strengths, and future information handling requirements. A clear understanding of the current environment is necessary to project the future. Supplier, consumer, and other organizations with a vested interest in information services shall contribute to this phase by responding to specific questions and issues, and by participating in working meetings. The data base derived from this process will be key to setting goals, objectives, and implementation strategies for the future.

Architecture Definition

This phase is to develop a model of the Agency's information handling facilities, data bases, and processes. The model is to be targeted at 5-7 years in the future. The results of the environment analysis, technology fare costs, and affordability assessments will all influence the model. The model will describe (diagrammatically where possible):

- o The structure of the Agency's information handling facilities and processes - their interoperability, interfaces, and functionality.

- o A unified information distribution network.

- o A universal terminal network.

ADMINISTRATIVE INTERNAL USE ONLY
Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE INTERNAL USE ONLY

- o Major Agency data bases - their composition, structure, residence, accessibility, use and inter-relationships.

- o Communication facilities.

- o Security and compartmentation.

Establishment of Goals, Objectives, and Implementation Strategies

This phase is the actual setting down of a plan to accomplish certain goals and objectives. Implementation strategies are outlined giving consideration to the possible options. Priorities are established to guide programming and budgeting activities.

Monitoring Progress

The IHSA will monitor and coordinate planning, programming, and budgeting activities to determine whether the Strategic Plan is having its intended impact, and to collect data which may be pertinent to the next revision.

4.0 METHODOLOGY

The original plan will be developed in three phases. In the first, a rough draft plan will be developed. This plan will be disseminated to all relevant Agency organization for comment and recommended changes. These responses will then be taken together with further architectural planning efforts and budgetary planning to produce a unified draft plan. The primary emphasis in the development of this second version of the plan will be on the reconciliation of budgetary considerations and system interoperation and architecture performance with time-phased implementation. Comments received from the circulation of this draft will then be incorporated in the development of the final plan which will guide the Agency's investment in Information Handling Systems over the next 5-7 years.

ADMINISTRATIVE - INTERNAL USE ONLY
Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

APPENDIX C

Policy and Procedures for Management for Information Systems

A. PURPOSE

This document is to set forth Agency policy regarding management responsibilities for the acquisition of new or enhanced Information System capabilities.

B. APPLICABILITY AND SCOPE

The provisions of this document apply to automated or other clearly identifiable processes used for creation, movement, use, storage, retrieval, or dissemination of intelligence and management information. Included are ADP hardware and software systems, communications sytems, terminals, word-processing, printers and copiers, image processing and display systems.

C. POLICY

1. General

Information System acquisitions shall be reviewed and approved at decision milestones by appropriate management levels. Systems of extraordinary cost, risk, or interest shall be reviewed by the EXCOM; the Information Handling Systems Architect (IHSA) and the Program Management Component shall support the EXCOM review process. Information Systems falling below the EXCOM review threshold, but nevertheless important in the context of Agency Information Systems Architecture and Planning, may be reviewed by the IHSA at decision milestones.

2. Specific

For purposes of management and coordination there are three classes of information systems, determined by investment cost thresholds. Class I and II systems shall comply with the procedures, standards, and documentation requirements for major programs. Class III programs shall comply with the procedures, standards and documentation requirements for minor programs.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

a) Class I Informations Systems shall be reviewed and approved at decision milestones by the EXCOM. Any Information System, or any significant revision of an existing Information System, meeting any one of the following criteria shall be designated a Class I Information System:

   i) Has anticipated acquisition costs in excess of $8 million during the span from program initiation to the time the system becomes operational; or

   ii) Has estimated costs in excess of $2 million in any year; or

   iii) Is designated as being of special interest or considered to have Agency-wide or community importance. Nominations to the EXCOM can be made by any of the EXCOM principals or the IHSA.

b) Class II Information Systems shall be reviewed and approved at decision milestones by the Deputy Director responsible for the system. Any Information System, or any significant revision of an existing Information System, meeting any of the following criteria shall be designated a Class II Information System:

   i) Has anticipated acquisition costs in excess of $1 million during the year from program initiation to the time the system becomes operational; or

   ii) Has estimated acquisition costs in excess of $250,000 in any year; or

   iii) Is designated as being of special interest.

c) Class III Information Systems shall be reviewed and approved as the responsible Deputy Director may direct. In general, it is anticipated that he will delegate that authority to the next lower level of management. Any information system, or any significant revision of an information system which is in cost or importance less than Class II is a Class III system.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

3. Milestone Decisions

Three milestone decisions are defined for acquisition of Major Information Systems.

- o Milestone 0 Decision -- Approval of Mission Need Statement approval of the budget and schedule, and authorization to proceed to the next program phase. The Mission Need Statement shall define the need for the system, and shall be accompanied by Preliminary System Requirements, acquisition strategy, schedule goals, and the total and annual investment of resources estimated. The next program phase for a simple package (no program development investment, e.g., a computer with standard support software) is the actual procurement, or, for a complex system development, the next phase is the Concept Development Phase.

- o Milestone 1 Decision -- Approval of the System Design Concept, System Requirements, and Program Development Plan; and authorization to proceed with the next program phase. For large complex systems, alternate concepts are to be explored and evaluated before settling on a chosen concept, the reasons for a particular selection are to be presented. Documentation at this stage shall include baseline System Requirements, System Design Concept, and a Program Development Plan. System requirements will be accredited by the IHSA. Cost and schedule goals are reassessed. Equipment acquisition plans are presented for approval. Acquisition of production status, commercial hardware will normally be executed pursuant to this approval or direction. Approved programs then proceed to the Preliminary Design Phase.

- o Milestone 2 Decision -- Approval of the Preliminary Design and Revised Program Development. All acquisition programs, however phased, will have a single Preliminary Design Review (PDR) covering the entire program. This review is coordinated with the program's internal PDR so that issues arising as a result of the PDR process can be evaluated. At this milestone review the program cost, functionality, and schedule objectives, as defined and determined at the PDR, are reassessed. Approved programs then proceed to full-scale development.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

At each decision milestone, guidance and direction to the program are documented.

At any point at which a major program deviation in cost or schedule goals of more than 10 percent is estimated, the IHSA will be notified.

4. Procedures

The IHSA will receive all documentation relevant to systems development for Class I and II systems. Included are such documents as:

- o Functional requirements
- o Program acquisition plan
- o Feasibility, analyses and tradeoff studies
- o System specification
- o Management plan
- o System functional specifications
- o Interface control specifications
- o System detailed design specifications
- o System test and validation plan
- o Periodic progress reports

At least six months prior to Milestone 1 or 2 review of Class I and II systems the program sponsor will notify the IHSA. For Class I systems, the IHSA will coordinate and schedule an EXCOM review.

The IHSA will appoint a member of his staff to coordinate with the program office concerning preparation for the Milestone review. The program office will brief the IHSA office with respect to the program status for Class I and II systems. Questions which the office of the IHSA has with the project will be addressed to the project management. The intent is to resolve all the questions that pertain to such matters as the project formulation, completeness of planning and design, interoperability, conformity with standards, and supportability prior to the Milestone review.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Prior to the review, the IHSA will prepare brief point papers covering any points of concern or disagreement relative to the information system's development. Approximately one week prior to the EXCOM Milestone review of Class I systems, the IHSA will prebrief the EXCOM concerning unresolved issues and concerns. The project management will then brief the EXCOM on the system at the Milestone review. The IHSA will then prepare a decision coordinating paper documenting the EXCOM guidance and direction to the project.

For Class II systems, if the IHSA feels that there are significant architectural concerns, he may join the Milestone review.

5. IHSA Responsibilities

The Information Handling Systems review process compliments the budgeting process. Information System decisions must fit into the affordability framework of the budget, and further, must fit into the Agency architecture and planning framework for Information Systems. In that context specific IHSA responsibilities include:

a) Formulating overall architecture tenets for Information Systems

b) Conducting formal reviews of proposed Information Systems to:

- o Accredit requirements
- o Determine compliance with architecture tenets
- o Validate Functional Requirements
- o Validate System Concept

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

- o Ensure that relevant interfaces are considered
- o Validate information security of proposed design

c) Advising on relative priorities of Information Systems

d) Focusing the issues for EXCOM reviews

e) Making an annual report to the EXCOM on the status of IHSs in the Agency and advising EXCOM on Information Handling Systems decisions

f) Designated individual for the Agency, assuring compliance with government-wide standards and procedures. Included is assuring Agency compliance with Federal Information Processing Standards, and granting waivers to these in accordance with delegated authorities and specified procedures.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9
ADMINISTRATIVE - INTERNAL USE ONLY

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

DRAFT HR

APPENDIX D

OFFICE OF INFORMATION HANDLING SYSTEMS ARCHITECT

(1) MISSION

(a) Leads Agency level planning for Information Handling Systems soliciting, coordinating, and integrating inputs from organizations which supply, consume, or affect information services.

(b) Reviews major information Handling Systems during requirements definition and conceptual design stages to ensure that overall Agency interests are properly considered.

(2) FUNCTIONS:

(a) Develops and publishes strategic goals and objectives for purpose of program guidance.

(b) Monitors progress toward goals and objectives the reports state of Information Handling to EXCOM (incorporates ADP review).

(c) Provides approval for all agency information handling systems architecture.

(d) Consolidates requirements for IH to maximize commonality and minimize unique development.

(e) Conducts design reviews during conceptual design phase.

(f) Maintains technology forecasts and reports trends to developers, users and management.

(g) Acts as Agency focal point to Community on matters of IH.

(h) Commissions system designs to fulfill architecture.

(i) Initiates studies and analyses for the purpose of identifying ways to improve the effectiveness and efficiency of IH.

(j) Maintains a current data base on the status of Agency information systems and their interrelationships.

(k) In coordination with other Agency components, formulates and promulgates standards to be applied to Information Handling Systems.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9

(l) Assures compliance with Agency Standards; grants waivers in accordance with delegated authority.

(m) Coordinates Information Handling Systems training programs for developers and users.

Approved For Release 2003/06/20 : CIA-RDP84B00890R000400040012-9